

### AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions of claims in the application:

#### **Listing of Claims:**

1. (Currently Amended) A computer implemented system for interacting with an object, the system comprising:

a method call interceptor that intercepts a method call to an object and that routes the method call to a proxy, the method call interceptor accessible to application code to at least one of adapt or extend functionalities of the system; ~~and~~

an application code generic proxy that receives an intercepted method call, invokes a method on the object, receives results from the object and passes results to an entity that generated the intercepted method call based at least in part on the intercepted method call operability of the application code generic proxy modified by the application code, the application code generic proxy performs proxy pre-processing that includes machine learning to optimize remote method call invocation before invoking the method on the object, wherein the optimization of the remote method call includes at least one of determining an amount of data sent to the object, determining a type of data sent to the object or determining which objects are invoked; and

a memory operatively coupled to a processor that retains the method call interceptor.

2. (Previously Presented) The system of claim 1, the object is located across a remoting boundary.

3. (Previously Presented) The system of claim 2, the object is marshaled by reference.

4. (Previously Presented) The system of claim 2, the object is marshaled by value.

5. (Previously Presented) The system of claim 1, the method call interceptor populates a call information data store with information associated with the intercepted method call, the call information data store is accessible to the application code generic proxy.
6. (Previously Presented) The system of claim 5, the call information data store is populated with at least one of a method name, one or more input parameters, a count of the number of input parameters, one or more type identifiers associated with the input parameters, a count of the number of return parameters for the method call, one or more type identifiers associated with the return parameters, class/interface defining method data, a stack pointer and a heap pointer.
7. (Previously Presented) The system of claim 6, the call information data store is a message object that can be serialized and passed across a remoting boundary.
8. (Previously Presented) The system of claim 1, the method call interceptor transfers control to a method in the application code generic proxy, the method in the application code generic proxy overrides a base class method defined in a base class object from which the application code generic proxy inherits.
9. (Cancelled).
10. (Previously Presented) The system of claim 1, the proxy pre-processing further comprises at least one of load-balancing, transaction processing, object migration, object persisting, monitoring remote method calls, caching local data, caching remote data, and controlling remote method call invocations.
11. (Previously Presented) The system of claim 1, the application code generic proxy performs proxy post-processing after receiving the results from the object.

12. (Previously Presented) The system of claim 11, the proxy post-processing comprises at least one of auditing, transaction processing, object migration, object persisting, monitoring remote method calls, caching local data, caching remote data, controlling remote method call invocations and machine learning involved in optimizing remote method call invocation.
13. (Previously Presented) The system of claim 1, the application code generic proxy invokes the method on the object by invoking a method available in a remoting infrastructure.
14. (Currently Amended) A computer readable storage medium containing computer executable components for interacting with an object, the components comprising:
- a method call intercepting component that intercepts a method call to an object and routes the method call to a proxy, the method call intercepting component accessible to application code to at least one of adapt or extend functionalities of the proxy; and
  - an application code generic proxy component that receives an intercepted method call, invokes a method on the object, receives results from the object and passes results to the entity that generated the intercepted method call, the application code generic proxy component functionality modified by the application code based at least in part on the intercepted method call, the application code generic proxy performs proxy pre-processing that comprises machine learning to optimize remote method call invocation before invoking the method on the object, wherein the optimizing the remote method call includes at least one of determining an amount of data sent to the object, determining a type of data sent to the object or determining which objects are invoked.
15. (Currently Amended) A method for interacting with an object, the method comprising:
- creating a base class proxy object;
  - creating an application code generic proxy, the application code generic proxy inherits from the base class proxy object;
  - overriding a base class method defined in the base class, the overridden method receives an intercepted method call;
  - intercepting a method call on the object, the interception made accessible to a developer to at least one of adapt or extend functionalities of the application code generic proxy;

routing the method call to the application code generic proxy;  
adapting the application code generic proxy functionality based at least in part on the method call, the application code generic proxy performs proxy pre-processing comprising transaction processing and machine learning to optimize remote method call invocation before invoking a method on the object, wherein the optimizing the remote method call includes at least one of determining an amount of data sent to the object, determining a type of data sent to the object or determining which objects are invoked;  
invoking the method on the object;  
performing custom user-directed application processing to at least one of monitor or control the processing of a message between the application code generic proxy and the object;  
receiving a first result from the object; and  
returning a second result to the entity that generated the intercepted method call.

16. (Cancelled).

17. (Previously Presented) The method of claim 15, the proxy pre-processing further comprises at least one of load-balancing, object migration, object persisting, monitoring remote method calls, caching local data, caching remote data, and controlling remote method call invocations.

18. (Previously Presented) The method of claim 15, the application code generic proxy performs proxy post-processing before returning the result to the entity that generated the intercepted method call.

19. (Previously Presented) The method of claim 18, the proxy post-processing comprises at least one of auditing, transaction processing, object migration, object persisting, monitoring remote method calls, caching local data, caching remote data, controlling remote method call invocations and machine learning involved in optimizing remote method call invocation.

20. (Previously Presented) The method of claim 15, the object is located across a remoting boundary.

21. (Previously Presented) The method of claim 20, the object is marshaled by reference.
22. (Previously Presented) The method of claim 20, the object is marshaled by value.
23. (Currently Amended) A computer readable storage medium containing computer executable instructions for performing a method for interacting with an object, the method comprising:
- creating a base class proxy object;
  - creating an application code generic proxy, the application code generic proxy inherits from the base class proxy object;
  - overriding a base class method defined in the base class, the overridden method receives an intercepted method call;
  - intercepting a method call on the object, the interception made accessible to a developer to at least one of adapt or extend functionalities of the application code generic proxy;
  - based at least in part on the intercepted method call, adjusting the application code generic proxy functionality;
  - employing the application code generic proxy to perform proxy pre-processing comprising at least machine learning to optimize remote method call invocation prior to invoking a method on a object, wherein the optimization of the remote method call includes at least one of determining an amount of data sent to the object, determining a type of data sent to the object or determining which objects are invoked;
  - routing the method call to the application code generic proxy;
  - invoking the method on the object;
  - receiving a first result from the object; and
  - returning a second result to the entity that generated the intercepted method call.
24. (Cancelled)
25. (Cancelled).
26. (Cancelled)

27. (Currently Amended) A computer implemented system for interacting with an object, the system comprising:

means for creating a base class proxy object from application code, the base class proxy object has a method that can be overridden by an inheriting application code generic proxy so that the overridden method can receive an intercepted method call;

means for creating the application code generic proxy, the application code generic proxy inherits from the base class proxy object and the application code generic proxy overrides the base class method that can be overridden;

means for intercepting a method call and for transferring control to the overridden base class method in the application code generic proxy;

means for the interception to be made accessible to application code to at least one of adapt or extend functionalities of the system ;

means for accessing method call interception functionality;

means for retrieving information associated with a method call that can be intercepted by the interception functionality;

means for at least one of adapting or extending the functionality of object systems;

means for the application code generic proxy to receive the intercepted method call;

means for modifying the application code generic proxy operability based at least in part on the intercepted method call and externally supplied application code;

means for providing the overridden base class method with a call data structure associated with the intercepted method call;

means for the application code generic proxy to invoke the method on the object;

means for the application code generic proxy to perform proxy pre-processing that includes load-balancing, transaction processing and machine learning to optimize remote method call invocation prior to utilizing the means for the application code generic proxy to invoke the method on the object, wherein the optimization of the remote method call includes at least one of determining an amount of data sent to the object, determining a type of data sent to the object or determining which objects are invoked;

means for the application code generic proxy to receive a first result from the object; and

means for the application code generic proxy to return a second result to the entity that generated the intercepted method call.